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## NOTICE OF ALLOWANCE AND FEE(S) DUE

7590

08/20/2010

Tarolli, Sundheim, Covell & Tummino  
1300 East Ninth Street  
Suite 1700  
Cleveland, OH 44114

EXAMINER

SAVANI, AVINASH A

ART UNIT

PAPER NUMBER

3749

DATE MAILED: 08/20/2010

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/540,695	11/03/2006	Michael J O'Donnell	16-589PUS	2008

TITLE OF INVENTION: BURNER

APPLN. TYPE	SMALL ENTITY	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	NO	\$1510	\$300	\$0	\$1810	11/22/2010

THE APPLICATION IDENTIFIED ABOVE HAS BEEN EXAMINED AND IS ALLOWED FOR ISSUANCE AS A PATENT. **PROSECUTION ON THE MERITS IS CLOSED.** THIS NOTICE OF ALLOWANCE IS NOT A GRANT OF PATENT RIGHTS. THIS APPLICATION IS SUBJECT TO WITHDRAWAL FROM ISSUE AT THE INITIATIVE OF THE OFFICE OR UPON PETITION BY THE APPLICANT. SEE 37 CFR 1.313 AND MPEP 1308.

THE ISSUE FEE AND PUBLICATION FEE (IF REQUIRED) MUST BE PAID WITHIN **THREE MONTHS** FROM THE MAILING DATE OF THIS NOTICE OR THIS APPLICATION SHALL BE REGARDED AS ABANDONED. **THIS STATUTORY PERIOD CANNOT BE EXTENDED.** SEE 35 U.S.C. 151. THE ISSUE FEE DUE INDICATED ABOVE DOES NOT REFLECT A CREDIT FOR ANY PREVIOUSLY PAID ISSUE FEE IN THIS APPLICATION. IF AN ISSUE FEE HAS PREVIOUSLY BEEN PAID IN THIS APPLICATION (AS SHOWN ABOVE), THE RETURN OF PART B OF THIS FORM WILL BE CONSIDERED A REQUEST TO REAPPLY THE PREVIOUSLY PAID ISSUE FEE TOWARD THE ISSUE FEE NOW DUE.

## HOW TO REPLY TO THIS NOTICE:

I. Review the SMALL ENTITY status shown above.

If the SMALL ENTITY is shown as YES, verify your current SMALL ENTITY status:

A. If the status is the same, pay the TOTAL FEE(S) DUE shown above.

B. If the status above is to be removed, check box 5b on Part B - Fee(s) Transmittal and pay the PUBLICATION FEE (if required) and twice the amount of the ISSUE FEE shown above, or

If the SMALL ENTITY is shown as NO:

A. Pay TOTAL FEE(S) DUE shown above, or

B. If applicant claimed SMALL ENTITY status before, or is now claiming SMALL ENTITY status, check box 5a on Part B - Fee(s) Transmittal and pay the PUBLICATION FEE (if required) and 1/2 the ISSUE FEE shown above.

II. PART B - FEE(S) TRANSMITTAL, or its equivalent, must be completed and returned to the United States Patent and Trademark Office (USPTO) with your ISSUE FEE and PUBLICATION FEE (if required). If you are charging the fee(s) to your deposit account, section "4b" of Part B - Fee(s) Transmittal should be completed and an extra copy of the form should be submitted. If an equivalent of Part B is filed, a request to reapply a previously paid issue fee must be clearly made, and delays in processing may occur due to the difficulty in recognizing the paper as an equivalent of Part B.

III. All communications regarding this application must give the application number. Please direct all communications prior to issuance to Mail Stop ISSUE FEE unless advised to the contrary.

**IMPORTANT REMINDER:** Utility patents issuing on applications filed on or after Dec. 12, 1980 may require payment of maintenance fees. It is patentee's responsibility to ensure timely payment of maintenance fees when due.

# **PART B - FEE(S) TRANSMITTAL**

**Complete and send this form, together with applicable fee(s), to:** **Mail** **Mail Stop ISSUE FEE**  
**Commissioner for Patents**  
**P.O. Box 1450**  
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**or Fax** **(571)-273-2885**

**INSTRUCTIONS:** This form should be used for transmitting the ISSUE FEE and PUBLICATION FEE (if required). Blocks 1 through 5 should be completed where appropriate. All further correspondence including the Patent, advance orders and notification of maintenance fees will be mailed to the current correspondence address as indicated unless corrected below or directed otherwise in Block 1, by (a) specifying a new correspondence address; and/or (b) indicating a separate "FEE ADDRESS" for maintenance fee notifications.

CURRENT CORRESPONDENCE ADDRESS (Note: Use Block 1 for any change of address)

Note: A certificate of mailing can only be used for domestic mailings of the Fee(s) Transmittal. This certificate cannot be used for any other accompanying papers. Each additional paper, such as an assignment or formal drawing, must have its own certificate of mailing or transmission.

7590 08/20/2010  
 Tarolli, Sundheim, Covell & Tummino  
 1300 East Ninth Street  
 Suite 1700  
 Cleveland, OH 44114

## **Certificate of Mailing or Transmission**

I hereby certify that this Fee(s) Transmittal is being deposited with the United States Postal Service with sufficient postage for first class mail in an envelope addressed to the Mail Stop ISSUE FEE address above, or being facsimile transmitted to the USPTO (571) 273-2885, on the date indicated below.

(Depositor's name)
(Signature)
(Date)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/540,695	11/03/2006	Michael J O'Donnell	16-589P/US	2008
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nonprovisional	NO	\$1510	\$300	\$0	\$1810	11/22/2010

EXAMINER	ART UNIT	CLASS-SUBCLASS
SAVANI, AVINASH A	3749	431-354000

1. Change of correspondence address or indication of "Fee Address" (37 CFR 1.363).

- ☐ Change of correspondence address (or Change of Correspondence Address form PTO/SB/122) attached.  
☐ "Fee Address" indication (or "Fee Address" Indication form PTO/SB/47; Rev 03-02 or more recent) attached. Use of a **Customer Number is required.**

2. For printing on the patent front page, list

- (1) the names of up to 3 registered patent attorneys or agents OR, alternatively, 1 \_\_\_\_\_  
 (2) the name of a single firm (having as a member a registered attorney or agent) and the names of up to 2 registered patent attorneys or agents. If no name is listed, no name will be printed. 2 \_\_\_\_\_  
 3 \_\_\_\_\_

3. ASSIGNEE NAME AND RESIDENCE DATA TO BE PRINTED ON THE PATENT (print or type)

PLEASE NOTE: Unless an assignee is identified below, no assignee data will appear on the patent. If an assignee is identified below, the document has been filed for recordation as set forth in 37 CFR 3.11. Completion of this form is NOT a substitute for filing an assignment.

(A) NAME OF ASSIGNEE

(B) RESIDENCE: (CITY and STATE OR COUNTRY)

Please check the appropriate assignee category or categories (will not be printed on the patent): ☐ Individual ☐ Corporation or other private group entity ☐ Government

4a. The following fee(s) are submitted:

- ☐ Issue Fee  
☐ Publication Fee (No small entity discount permitted)  
☐ Advance Order - # of Copies \_\_\_\_\_

4b. Payment of Fee(s): (Please first reapply any previously paid issue fee shown above)

- ☐ A check is enclosed.  
☐ Payment by credit card. Form PTO-2038 is attached.  
☐ The Director is hereby authorized to charge the required fee(s), any deficiency, or credit any overpayment, to Deposit Account Number \_\_\_\_\_ (enclose an extra copy of this form).

5. Change in Entity Status (from status indicated above)

- ☐ a. Applicant claims SMALL ENTITY status. See 37 CFR 1.27. ☐ b. Applicant is no longer claiming SMALL ENTITY status. See 37 CFR 1.27(g)(2).

NOTE: The Issue Fee and Publication Fee (if required) will not be accepted from anyone other than the applicant; a registered attorney or agent; or the assignee or other party in interest as shown by the records of the United States Patent and Trademark Office.

Authorized Signature \_\_\_\_\_ Date \_\_\_\_\_  
 Typed or printed name \_\_\_\_\_ Registration No. \_\_\_\_\_

This collection of information is required by 37 CFR 1.311. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, Virginia 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450.

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SAVANI, AVINASH A

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## Determination of Patent Term Adjustment under 35 U.S.C. 154 (b) (application filed on or after May 29, 2000)

The Patent Term Adjustment to date is 247 day(s). If the issue fee is paid on the date that is three months after the mailing date of this notice and the patent issues on the Tuesday before the date that is 28 weeks (six and a half months) after the mailing date of this notice, the Patent Term Adjustment will be 247 day(s).

If a Continued Prosecution Application (CPA) was filed in the above-identified application, the filing date that determines Patent Term Adjustment is the filing date of the most recent CPA.

Applicant will be able to obtain more detailed information by accessing the Patent Application Information Retrieval (PAIR) WEB site (<http://pair.uspto.gov>).

Any questions regarding the Patent Term Extension or Adjustment determination should be directed to the Office of Patent Legal Administration at (571)-272-7702. Questions relating to issue and publication fee payments should be directed to the Customer Service Center of the Office of Patent Publication at 1-(888)-786-0101 or (571)-272-4200.

**Notice of Allowability****Application No.**

10/540,695

**Applicant(s)**

O'DONNELL ET AL.

**Examiner**

AVINASH SAVANI

**Art Unit**

3749

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--**

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 5/4/2010.
2. ☒ The allowed claim(s) is/are 1,4-19,27-33, 45, 46, 48 and 49.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some\* c) ☐ None of the:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.  
**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.  
(a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached  
1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.  
(b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.  
**Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).**
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

**Attachment(s)**

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☒ Information Disclosure Statements (PTO/SB/08),  
Paper No./Mail Date 5/5/2010
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application
6. ☐ Interview Summary (PTO-413),  
Paper No./Mail Date \_\_\_\_\_
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other \_\_\_\_\_.

/Avinash Savani/  
Examiner, Art Unit 3749

**EXAMINER'S AMENDMENT**

1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it **MUST** be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with John Hlavka on 8/9/2010.

The application has been amended as follows:

**IN THE CLAIMS:**

In all allowed claims containing "diffuser/reflector" please change "diffuser/reflector" to --diffuser--.

By way of this amendment, please cancel claims 20, 21, 23-26 and 47.

In independent claim 1, line 6, change "diffuser/reflector" to --diffuser--.

In independent claim 1, line 7, after "an inlet conduit" insert --with an angled discharge end--.

In independent claim 1, line 9, after "said diffuser/reflector" insert --wherein inlet conduit extends partially into said burner body-- and change "diffuser/reflector" to --diffuser--.

In independent claim 1, line 10, change "diffuser/reflector" to --diffuser--.

In independent claim 1, line 12, change "diffuser/reflector" to --diffuser--.

In independent claim 1, line 14, after "rows" insert --located on both sides of said diffuser-- and change "diffuser/reflector" to --diffuser--.

In independent claim 1, line 15, change "diffuser/reflector" to –diffuser--.

In independent claim 1, line 16, after "associated guide plates" insert –located between said openings with said guide plates--.

In dependent claim 4, line 2, change "diffuser/reflector" to –diffuser--.

In independent claim 5, line 3, after "lower housing" insert –having sidewalls--.

In independent claim 5, line 6, after "an inlet conduit" insert –with an angled discharge end--.

In independent claim 5, line 9, after "defining element" insert –wherein said inlet conduit extends partially into said burner body--.

In independent claim 5, line 11, after "rigidizing ribs" insert –arranged perpendicularly with respect to said inlet conduit--.

In independent claim 5, line 15, after "burner body region" insert –and e) an inverted, v-shaped sheet metal stamping diffuser having a partially stamped, overhanging guide plates to allow said gas/air mixture to flow radially outwardly toward said side walls--.

In independent claim 15, line 6, after "an inlet conduit" insert – with an angled discharge end--.

In independent claim 15, line 11, after "combustible gas" insert ---wherein said inlet conduit extends partially into said burner body--.

In independent claim 15, line 19, after "said inlet conduit" insert –and e) an air scoop located in said combustion chamber defining a flow path for primary air and

which extends from an inlet end of said inlet conduit and a primary air source located outside of said combustion chamber--.

In independent claim 27, line 4, after "lower housing" insert --having side walls--.

In independent claim 27, line 6, after "inlet conduit" insert --with an angled discharge end--.

In independent claim 27, line 10, after "combustible gas" insert --wherein said inlet conduit extends partially into said burner body--.

In independent claim 27, line 17, after "said access opening" insert --and e) an inverted, v-shaped sheet metal stamping diffuser having a partially stamped, overhanging guide plates to allow said gas/air mixture to flow radially outwardly toward said side walls--.

## **REASONS FOR ALLOWANCE**

2. The following is an examiner's statement of reasons for allowance: The invention, "Burner", is in the field of gas/air mixture burners, specifically for use in a water heater. In a first embodiment, the invention is defined as: A gas burner comprising: a) a burner body including: i) a lower housing said lower housing having a sidewall; ii) an element defining a combustion surface attached to said lower housing; iii) a diffuser positioned below said element; b) an inlet conduit with an angled discharge end communicating with said burner body through which a gas/air mixture is delivered to said burner body in a region located below said diffuser wherein inlet conduit extends partially into said burner body; and, c) said diffuser including a plurality of openings, each opening having an overhanging guide plate; d) said diffuser having a somewhat

inverted V-shaped configuration, and said openings are arranged in sets of parallel rows located on both sides of said diffuser and said diffuser including a second plurality of openings located in an upper region of said diffuser/reflector which do not include associated guide plates located between said openings with said guide plates, e) said openings of said parallel rows being oriented to direct said gas/air mixture in a direction generally toward said sidewall, said direction being generally transverse to an axis of said inlet conduit. Other features of the invention include, but are not limited to, a combustion surface with rigidizing ribs and an air scoop that acts as an air supply. The prior art of reference, U.S. Patents 6659765 to Sen-Yu, 5520536 to Rodgers et al, 3185204 to Loeb et al and Saponara et al 3122197 are all in the field of gas/air burners. Sen-Yu teaches a burner device having an inlet conduit, a combustion surface and a diffuser. Rodgers teaches a burner having a combustion surface and a diffuser with guide plates, located in a housing. Loeb et al teaches a burner with an inlet conduit, with an attached angled piece. Saponara et al teaches a burner with an inlet conduit and a combustion surface with ribs. The prior art of reference does not show all the features of the invention, specifically an angled inlet conduit, overhanging guide plates, in combination with a housing, a combustion surface and a diffuser with a second group of openings. These features show certain benefits not shown in the prior art. Specifically, an angled inlet conduit that gives a greater outlet cross-sectional area that allows for more air entrainment, and guide plates to direct a gas/air mixture outwardly to ensure an even dispersal of said mixture. These features, combined with the others mentioned above, allow for an efficient burner to properly heat a water supply, wherein the burner



is constructed in such a manner to ensure a long, functional life. For these reasons, the invention is unique, and therefore allowable.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Any inquiry concerning this communication or earlier communications from the examiner should be directed to AVINASH SAVANI whose telephone number is (571)270-3762. The examiner can normally be reached on Monday- Friday, alternate Fridays off, 7:30-5 EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Steven McAllister can be reached on 571-272-6785. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Application/Control Number: 10/540,695  
Art Unit: 3749

Page 7

/Avinash Savani/  
Examiner, Art Unit 3749

Steven McAllister  
Supervisory Patent Examiner

/A. S./  
8/9/2010

/Steven B. McAllister/  
Supervisory Patent Examiner, Art Unit 3749